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TROUTMAN SANDERS LLP
BANK OF AMERICA PLAZA
600 PEACHTREE STREET, N.E.
SUITE 5200
ATLANTA, GA 30308-2216

EXAMINER	
ALTUN, NURI B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,848	ROOVERS ET AL.	
	Examiner	Art Unit	
	NURI ALTUN	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 December 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment received on 12/24/2008 has been acknowledged. Claim 1 has been cancelled. Claims 2, 5, 6, 17-21, 26, 28 and 31 have been amended. New claims 32-36 are presented.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Netherlands on 06/17/03 and 06/27/03. It is noted, however, that applicant has not filed a certified copy of the 1023681 and 1023765 applications as required by 35 U.S.C. 119(b). See MPEP Section 1893.03(c) III for further details.

Specification

Objection to specification has been overcome.

Drawings

Previous objection to drawings have been overcome.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "force sensor mounted in a bearing" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Previous rejections under 112 2nd paragraph have been overcome.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim **2-17 and 19-36** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Amended claims 2, 21 and 26 recite, "at **its** inner side." It is not clear what inner side is being referred to.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **2-4, 7, 10-13, 16, 17, 19-23, 26-30 and 32-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932)**, in view of **Searle (GB 2,312,193).**

As per claim 2, Venema teaches a transmission system comprising:

a drive wheel (12), a driven wheel (11), and a coupling chain (10) having a first chain half and a second chain half (see Fig. 2);

a tension difference measuring device (26) for providing a measurement signal which is representative for the torque transmitted by the coupling chain (col.2, lines 24-27);

said measuring device comprising a transverse force sensor (22; 23) arranged within the span of the coupling chain, provided with measuring means, for providing a measurement signal (col.2, lines 24-38) that is proportional to the component, directed substantially perpendicular to the plane defined by the rotation axes of the drive wheel (12) and the driven wheel (11) (see Fig. 3), of the resultant of the transverse forces (F.sub.1, F.sub.2) exerted to the sensor by the chain parts (col.2 line 53 – col.3 line4).

wherein the transverse force (22; 23) sensor is arranged between the drive wheel (12) and the driven wheel (11), and has a first contact face (surface of 22) touching the first chain half and a second contact face (surface of 23) touching the second chain half.

Venema doesn't explicitly disclose the sensor touching the chain at the inner sides of the chain.

Searle teaches a force sensor placed inside of the chain and touching the chain at the inner side (see Fig. 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include the force sensor placement as taught by Searle in order to provide a simple substitution of one known element for another to obtain predictable results.

As per claim 3, Venema teaches the transverse force sensor (22; 23) has a circular outline.

As per claim 4, Venema teaches the transverse force sensor (22; 23) is rotatably mounted.

As per claim 7, Venema teaches the center point of the transverse force sensor (22; 23) is substantially located in the plane defined by the rotation axes of the drive wheel (12) and the driven wheel (11) (see Fig. 1), and wherein a rotation axis (line along 24 and 25) of the transverse force sensor is directed substantially parallel to the rotation axes (line along 13 and 15) of the drive wheel (12) and the driven wheel (11).

As per claim 10, Venema teaches said measuring means are adapted for measuring a displacement of the transverse force sensor (col.3, lines 5-13).

As per claim 11, Venema teaches said measuring means comprise a supporting arm (17) for the transverse force sensor, as well as a sensor (strain gauge) for

measuring a deformation of the supporting arm (17) (col.3, lines 9-13; since the force acts on the arm, it is inherent that deformation of arm will occur).

As per claim 12, Venema teaches said supporting arm (17) is directed substantially perpendicular with respect to the plane defined by the rotation axes of the drive wheel (12) and the driven wheel (11), and wherein said sensor is adapted for measuring a change in length of the supporting arm (col.3, lines 5-13).

As per claim 13, Venema teaches said supporting arm (17) is directed substantially perpendicular with respect to the plane defined by the coupling chain (10) (see Fig. 1), and wherein said sensor is adapted for measuring a bending of the supporting arm (col.3, lines 5-13).

As per claim 16, Venema teaches the measuring sensor comprises one or more strain gauges (col.2, lines 28-29).

As per claim 17, Venema and Searle combination teaches all the structural limitations of the claimed invention, as mentioned in claim 2 above, but doesn't explicitly disclose at least the contact faces of the force sensor are manufactured of a sound production counteracting material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the contact faces of the force sensor to be manufactured of a sound production counteracting material in order to prevent damage. Also note *MPEP Section 2144.07* states that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination.

As per claims 19 and 20, Venema teaches all the structural limitations of the claimed invention as mentioned in claim 2 above, but doesn't explicitly disclose a vehicle comprising aforementioned transmission system driven by human force (claim 19) and a training device comprising aforementioned transmission system, which is a bicycle training device (claim 20).

Searle further teaches a vehicle driven by human force (Claim 19) and a bicycle training device (Claim 20) (see page 1, paragraphs 1-4; pedal cycles are construed to be riding a bicycle or training device).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include vehicle taught by Searle in order to put the invention to a daily use.

As per claim 21, Venema teaches a method for measuring a drive force being transmitted by a transmission system, comprising:

a drive wheel (12), a driven wheel (11), and a coupling chain (10) having a first chain half and a second chain half (see Fig. 2);

said method comprising the steps of:

providing a transverse force sensor (22; 23) having a first contact face and a second contact face (see Fig. 1);

arranging the transverse force sensor between the drive wheel and the driven wheel within the span of the chain (10), in such a way that the first contact face is in force transmitting contact with the first chain half and that the second contact face is in force transmitting contact with the second chain half; measuring the component (col.2,

lines 24-38), directed substantially perpendicular to the plane defined by the rotation axes of the drive wheel and the driven wheel, of the resultant of the transverse forces exerted to the transverse force sensor (22; 23) by the first chain half and the second chain half (col.2 line 53 – col.3 line4 and see Fig. 2), and providing a measurement signal that is proportional to said component (col.2, lines 24-38).

Venema doesn't explicitly disclose the sensor touching the chain at the inner sides of the chain.

Searle teaches a force sensor placed inside of the chain and touching the chain at the inner side (see Fig. 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include the force sensor placement as taught by Searle in order to provide a simple substitution of one known element for another to obtain predictable results.

As per claim 22, Venema teaches force component is measured by measuring a displacement of the transverse force sensor caused by said force component (col.3, lines 5-13).

As per claim 23, Venema teaches the transverse force sensor (22; 23) is fixed with a supporting arm (17) with respect to the transmission system, and wherein said displacement is measured by measuring a deformation of the supporting arm (17) of the transverse force sensor caused by said force component (col.3, lines 9-13; since the force acts on the arm, it is inherent that deformation of arm will occur).

As per claim 26, Venema teaches tension difference measuring system for measuring the drive force being transmitted by a transmission system, comprising

a drive wheel (12), a driven wheel (11), and a coupling chain (10) having a first chain half and a second chain half (see Fig. 1);

said measuring system comprising:

a transverse force sensor (22; 23) having a first contact face and a second contact face (see Fig. 1), suitable for placing between the drive wheel and the driven wheel within the span of the coupling chain (10), in such a way that the first contact face is in force transmitting contact with the first chain half and that the second contact face is in force transmitting contact with the second chain half (col.2 line 53 – col.3 line4 and see Fig. 2);

said measuring system being suitable for performing the method according to claim 21.

Venema doesn't explicitly disclose the sensor touching the chain at the inner sides of the chain.

Searle teaches a force sensor placed inside of the chain and touching the chain at the inner side (see Fig. 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include the force sensor placement as taught by Searle in order to provide a simple substitution of one known element for another to obtain predictable results.

As per claim 27, Venema teaches a measuring system, furthermore comprising a supporting arm (17) carrying the transverse force sensor (22; 23), which arm is suitable for fixing the transverse force sensor with respect to the transmission system (see Fig. 1).

As per claim 28, Venema teaches the supporting arm (17) is provided with a deformation sensor (col.2, lines 28-29).

As per claim 29, Venema teaches the transverse force sensor (22; 23) has a circular outline and is rotatably attached to the supporting arm (17) (See Fig. 1).

As per claim 30, Venema teaches the supporting arm (17) has an elongated hole (the hole of 24) for mounting the transverse force sensor (22), said elongated hole having a longitudinal direction which substantially coincides with the longitudinal direction of the supporting arm (17) (see Fig. 1).

As per claim 32, Venema and Searle combination teaches all the structural limitations of the claimed invention, as mentioned in claim 17 above, but doesn't explicitly disclose the whole force sensor is manufactured of a sound production counteracting material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the whole force sensor to be manufactured of a sound production counteracting material in order to prevent damage. Also note *MPEP Section 2144.07* states that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination.

As per claims 33 and 34, Venema teaches all the structural limitations of the claimed invention as mentioned in claims 33 and 34 above, but doesn't explicitly

disclose a vehicle comprising aforementioned transmission system being a bicycle (claim 19) and a training device comprising aforementioned transmission system, being a home trainer or a spinning bike (claim 20).

Searle further teaches a vehicle being a bicycle (Claim 19) and a home trainer or a spinning bike (Claim 20) (see page 1, paragraphs 1-4; pedal cycles are construed to be riding a bicycle or training device).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include vehicle taught by Searle in order to put the invention to a daily use.

As per claim 35, Venema teaches the deformation sensor is one or more strain gauges (col.2, lines 28-29).

Claim **5** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Searle (GB 2,312,193),** as applied to claim 4 above, further in view of **Suolahti (6,305,145).**

Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 4 above, but doesn't explicitly disclose a force sensor is mounted on an axle of the rotatably mounted transverse force sensor, said force sensor preferably comprising a sensor sensitive to bending of the said axle.

Suolahti teaches a wrapping apparatus having a force sensor (8) is mounted on an axle (14) of the rotatably mounted transverse force sensor (see Fig. 2), said force sensor being sensitive to bending of the said axle (it is inherent that a sensor placed on the axle is sensitive to bending of the axle).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission system of Venema and Searle combination to include the force sensor mounting taught by Suolahti in order to provide a simple substitution of one known element for another to obtain predictable results.

Claim **6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Searle (GB 2,312,193),** as applied to claim 4 above, further in view of **Roovers et al. (WO 0130643).**

Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 4 above, but doesn't explicitly disclose a force sensor is mounted in a bearing of the rotatably mounted transverse force sensor, said force sensor preferably comprising a sensor sensitive to the resulting force exerted on the transverse force sensor.

Roovers et al. teach a force sensor (74) is mounted in a bearing (70) of the rotatably mounted transverse force sensor, said force sensor being sensitive to the resulting force exerted on the transverse force sensor (page 25 line 33 – page 26 line 7 and see Fig. 9A).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission system of Venema and Searle to include the force sensor mounting taught by Roovers et al. in order to provide a simple substitution of one known element for another to obtain predictable results.

Claims **8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Searle (GB 2,312,193),** as applied to claim 2 above, further in view of **Todd et al. (20030087713)**.

As per claim 8, Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 2 above, but doesn't explicitly disclose the two contact faces are convex with a varying curvature radius.

Todd et al. teach a tensioner (10) with vibrational damping with the two contact faces (two surfaces of 30) being convex with a varying curvature radius (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission system of Venema and Searle combintation to include the contact faces taught by Todd et al. in order to increase the contact surface with the chain and sensitivity.

As per claim 9, Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 2 above, but doesn't explicitly disclose the two contact faces are convex with a curvature radius which is larger than half the distance between both contact faces.

Todd et al. teach the two contact faces (two surfaces of 30) are convex with a curvature radius which is larger than half the distance between both contact faces (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission system of Venema and Searle

combination to include the contact faces taught by Todd et al. in order to increase the contact surface with the chain.

Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Searle (GB 2,312,193),** as applied to claim 11 above, further in view of **Nicolau (3,832,899).**

Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 11 above, but doesn't explicitly disclose said supporting arm is directed substantially parallel to the plane defined by the rotation axes of the drive wheel and the driven wheel and is directed substantially parallel to the plane defined by the coupling chai, and wherein said sensor is adapted for measuring a bending of the supporting arm.

Nicolau teaches a dynamometrical deflection measuring method and apparatus having the supporting arm (6) is directed substantially parallel to the plane defined by the rotation axes of the drive wheel (2) and the driven wheel (3) and is directed substantially parallel to the plane defined by the coupling chain (1) (see Fig. 2), and wherein a sensor (7) is adapted for measuring a bending of the supporting arm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema and Searle combination to include the arrangement taught by Nicolau in order to maximize compactness.

Claim **15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Searle (GB 2,312,193),** further in view of **Nicolau (3,832,899),** as applied to claim 14, further in view of **Suolahti (6,305,145).**

Venema, Searle and Nicolau combination teaches all the structural limitations of the claimed invention as mentioned in claim 14 above, but doesn't explicitly disclose said supporting arm is attached to a wheel axle of the drive wheel or of the driven wheel.

Suolahti teaches a supporting arm (13) is attached to a wheel axle (14) of the wheel (25) (col.4, lines 5-6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Venema, Searle and Nicolau to include the supporting arm arrangement taught by Suolahti in order to maximize compactness.

Claim **18** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932),** in view of **Hordnes et al. (5,445,036)**.

Venema teaches a transmission system comprising:

a drive wheel (12), a driven wheel (11), and a coupling chain (10) having a first chain half and a second chain half (see Fig. 2);

a tension difference measuring device (26) for providing a measurement signal which is representative for the torque transmitted by the coupling chain (col.2, lines 24-27);

said measuring device comprising a transverse force sensor (22; 23) arranged within the span of the coupling chain, provided with measuring means, for providing a measurement signal (col.2, lines 24-38) that is proportional to the component, directed substantially perpendicular to the plane defined by the rotation axes of the drive wheel

(12) and the driven wheel (11) (see Fig. 3), of the resultant of the transverse forces (F.sub.1, F.sub.2) exerted to the sensor by the chain parts (col.2 line 53 – col.3 line4).

However Venema doesn't explicitly disclose the transverse force sensor is one of the wheels, and wherein the measuring means is adapted for measuring the force exerted to the wheel concerned in a direction substantially perpendicular to the plane defined by the rotation axes of the drive wheel and the driven wheel.

Hordnes et al. teach a torque sensor with the concept of having the transverse force sensor is one of the wheels (see Fig. 1), and wherein the measuring means (36) is adapted for measuring the force exerted to the wheel concerned in a direction substantially perpendicular to the plane defined by the rotation axes of the drive wheel and the driven wheel (col.3, lines 39-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include the sensor taught by Hordnes et al. in order to maximize compactness.

Claim **24** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932)**, in view of **Searle (GB 2,312,193),** as applied to claim 22 above, further in view of **Suolahti (6,305,145).**

Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 22 above, but doesn't explicitly disclose the transverse force sensor is mounted on an axle, on which axle a force sensor is mounted, and wherein said displacement is measured by measuring a deformation of said axle of the transverse force sensor (10) caused by said force component .

Suolahti teaches the transverse force sensor is mounted on an axle (14), on which axle a force sensor (8) is mounted (see Fig. 2), and

wherein said displacement is measured by measuring a deformation of said axle of the transverse force sensor caused by said force component (it is inherent that a sensor placed on the axle on which a force component acts will measure the deformation of the axle).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema and Searle combination to include the force sensor mounting taught by Suolahti in order to provide a simple substitution of one known element for another to obtain predictable results.

Claim **25** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932)**, in view of **Searle (GB 2,312,193),** as applied to claim 22 above, further in view of **Roovers et al. (WO 0130643).**

Venema and Searle combination teaches all the structural limitations of the claimed invention as mentioned in claim 22 above, but doesn't explicitly disclose wherein the transverse force sensor is rotatably mounted in a bearing, wherein a force sensor is mounted in the bearing of the transverse force sensor, and wherein said displacement is measured by measuring a force on the bearing of the transverse force sensor caused by said force component.

Roovers et al. teach the transverse force sensor (74) is rotatably mounted in a bearing (70), wherein a force sensor is mounted in the bearing of the transverse force sensor, and

wherein said displacement is measured by measuring a force on the bearing of the transverse force sensor (74) caused by said force component (page 25 line 33 – page 26 line 7 and see Fig. 9A; it is construed that force component acts on the bearing which is measured by the sensor).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema and Searle combination to include the force sensor mounting taught by Roovers et al. in order to provide a simple substitution of one known element for another to obtain predictable results.

Claims **31 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Venema (3,992,932)**, in view of **Searle (GB 2,312,193),** as applied to claim 27 above, further in view of **Eddens (4,899,599).**

As per claim 31, Venema and Searle combination teaches all the structural limitations of the claimed invention, as mentioned in claim 27, but doesn't explicitly disclose the supporting arm has a cut-away which divides the arm in a primary arm part and a secondary arm part which supports the transverse force sensor; wherein the secondary arm part is connected to the primary arm part by at least two bridge parts; wherein a deformation sensor is mounted on a side face of at least one bridge part.

Eddens teaches a strain force sensor means having the supporting arm having a cut-away (34) which divides the arm in a primary arm part (28) and a secondary arm part (26) which supports the transverse force sensor (20);

wherein the secondary arm part (26) is connected to the primary arm part (28) by at least two bridge parts (30, 32);

wherein a deformation sensor (22) is mounted on a side face of at least one bridge part (30) (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema and Searle combination to include the cut-away taught by Eddens in order to maximize sensitivity.

As per claim 36, Venema and Searle combination teaches all the structural limitations of the claimed invention, as mentioned in claim 31, but doesn't explicitly disclose the deformation sensor comprises two strain gauges.

Eddens teaches the deformation sensor comprises two strain gauges (see abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema and Searle combination to include the strain gauges taught by Eddens in order to maximize sensitivity.

Response to Arguments

Applicants' arguments filed on 12/24/2008 have been fully considered but they are not persuasive.

Applicants first argue that, "the transverse force sensor of Venema is not located within the span of the coupling chain as currently claimed." The applicants further amended the claims to recite "the sensor touching the chain halves at the inner side." The examiner concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Venema to include the force sensor arrangement as taught by Searle in order to provide a simple substitution

of one known element for another to obtain predictable results. Therefore, applicants' arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the sensor is only loaded with the force difference in the present invention while sensors of Venema are always loaded with the full chain tension force) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's arguments, see last paragraph of page 11 and first paragraph of page 12 of the remarks, filed on 12/24/2008, with respect to claims 21 and 26 have been fully considered and are persuasive after the amendment of the claims. The rejection of claims 21 and 26 under Searle has been withdrawn after the amendment.

In response to applicant's argument that Suolahti and Augrende et al. are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Suolahti teaches a wrapping apparatus comprising belts and pulleys as seen in figures and therefore is analogous; Augrende et al. teach a

balancing machine for vehicle wheels comprising a belt and pulley and therefore is analogous.

Applicant next argues, "Suloahti does not suggest to one skilled in the art that a bending sensor can be applied to the Venema apparatus, and Augrende et al. does not suggest to one skilled in the art that a bending sensor can be applied to the Venema apparatus." The examiner relies on the rationale provided, that sensor of Suolahti can be applied to the Venema apparatus in order to provide a simple substitution of one known element for another to obtain predictable results.

Applicant next argues, "Todd does not suggest to one skilled in the art that a damper could be advantageously used in a transverse force sensor." The examiner relies on the rationale provided, that the contact faces of the sensor need to be increased for greater sensitivity therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Venema mechanism to include the contact faces taught by Todd et al. in order to increase the contact surface with the chain and sensitivity.

Applicant's arguments, see page 12, lines 16-19 of remarks, filed on 12/24/2008, with respect to the rejection(s) of claim(s) 6 and 25 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Roovers et al. (WO 0130643)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NURI ALTUN whose telephone number is (571)270-5807. The examiner can normally be reached on Mon-Fri 7:30 - 5:00 with first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272 7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Bradley T King/
Primary Examiner, Art Unit 3657

NBA